

Biological notes on two species of the genus *Roeslerstammia* Zeller (Lepidoptera, Roeslerstammiidae) in Japan

Toshiya HIROWATARI^{1)*}, Toshihiro TSUCHIYA^{2)#} and Shigeki KOBAYASHI^{1), 3)}

¹⁾Entomological Laboratory, Graduate School of Life and Environmental Sciences, Osaka Prefecture University, Sakai, Osaka, 599-8531 Japan

²⁾Entomological Laboratory, College of Agriculture, Osaka Prefecture University, Sakai, Osaka, 599-8531 Japan

³⁾Research Fellow of the Japan Society for the Promotion of Science

Abstract Biological notes are provided on variation of the hindwing pattern, distribution, and host plants of two *Roeslerstammia* species, i.e. *R. erxlebella* (Fabricius, 1787) and *R. pronubella* ([Denis & Schiffermüller], 1775), in Japan. *Fagus crenata* (Fagaceae) and *Carpinus laxiflora* (Betulaceae) are recorded as the host plants of *R. pronubella*.

Key words Distribution, host plant, Japan, variation, wing pattern.

Introduction

The genus *Roeslerstammia* is widespread through the Palearctic and Oriental regions, and four species are known: *R. erxlebella* (Fabricius, 1787) and *R. pronubella* ([Denis & Schiffermüller], 1775) from Europe to Japan, and *R. metaplastica* Meyrick, 1921 and *R. hemiadelpha* Meyrick, 1922 from India (Heppner, 2005).

In Japan, two species, *R. nitidella* and *R. bella* were described by Moriuti (1972), but they were treated as synonyms of *R. pronubella* and *R. erxlebella*, respectively (Budashkin, 1995). As in Moriuti (1972), these two species were sometimes separated by the difference of wing marking, i.e., presence or absence of yellow color on the hindwing. However, Agassiz (1996) and Huemer and Segerer (2001) indicated that the yellow color is sometimes observed in both species and that these two species are separable only by the genital characters.

After Moriuti's description, few additional distributional records have been reported in Japan. This is not only because the two *Roeslerstammia* species are relatively rare, but also because examination of genitalia is indispensable for their exact identification.

In the present study, in order to clarify the distribution of the two *Roeslerstammia* species within Japan, specimens accumulated in recent years were identified based on examination of the genitalia. Biological information, such as habits of the early stages, and host plants, is also reported.

Materials and Methods

Specimens deposited in the collection of the Entomological Laboratory, Osaka Prefecture University (OPU) were examined. Male and female genitalia were dissected for identification by standard methods. The abdomen was macerated for about 5 minutes in 10% KOH heated in a water bath. Host plants of *R. pronubella* were ascertained by checking label data of the reared specimens, and an additional observation of the immature stage of the species was conducted in Soni-mura, Nara Prefecture in 2011. As for synonyms of each species, those referred to Japanese representatives are selectively listed. Scientific names of plants follow Missouri Botanical Garden (2011).

Roeslerstammia pronubella ([Denis & Schiffermüller]) (Figs 1A–I, 2, 3, 5A–B, 6, 7)

Tinea pronubella [Denis & Schiffermüller], 1775: 142.

Roeslerstammia nitidella Moriuti, 1972: 251. Moriuti; 1982: 206.

Roeslerstammia pronubella: Budashkin, 1995: 33; Budashkin, 1997: 432; Huemer & Segerer, 2001: 209.

Roeslerstammia pronubella nitidella: Heppner, 2005: 27.

Diagnoses of genitalia (Figs 3, 5). Male (Fig. 3): Uncus bilobed, apically broad. Aedeagus, short, nearly straight, tapered toward apex. Female (Fig. 5A–B): Ductus bursae stout, corpus bursae rather small, discrimination of ductus and corpus bursae indistinct; signum indistinct or absent.

Biology (Figs 1F–I, 6, 7). The biology of the species has not been known in Japan. On the basis of data recorded

*Corresponding author. E-mail: hirowat_t@envi.osakafu-u.ac.jp

#Present address: Keichiku Center for the Dissemination of Improved Agricultural Methods, 1-2-1 Chuo, Yukuhashi, Fukuoka, 824-0005 Japan

A-I: *R. pronubella*. J-O: *R. erxebella*. A: ♀ [Mt. Izumikatsuragi, Osaka, 11. viii. 2001]. B: ♂ [Mt. Izumikatsuragi, Osaka, 22. iv. 1981]. C: ♂ [Mt. Hikosan, Fukuoka, 8. iv. 1964]. D: Holotype ♂ of "*R. nitidella*" [Mt. Iwawakisan, Osaka, 1. v. 1961]. E: *Ditto*, labels. F: Labels of ♂ shown in G. G: ♂ [Mt. Hikosan, Fukuoka, 8. iv. 1964]. H: ♂ [Mt. Izumikatsuragi, Osaka, 4. vi. 1998]. I: *Ditto*, labels. J: ♂ [Kuzakai, Iwate, 30. v. 1980]. K: ♂ [Mt. Wasamata, Nara, 22. viii. 1998]. L: ♀ [Mt. Tsurugi, Tokushima, 11. v. 2009]. M: ♂ [Mt. Shiratori, Kumamoto, 9-10. vi. 1990]. N: Holotype ♂ of "*R. bella*" [Mt. Ishizuchi, Ehime, 12. vi. 1961]. O: *Ditto*, labels.

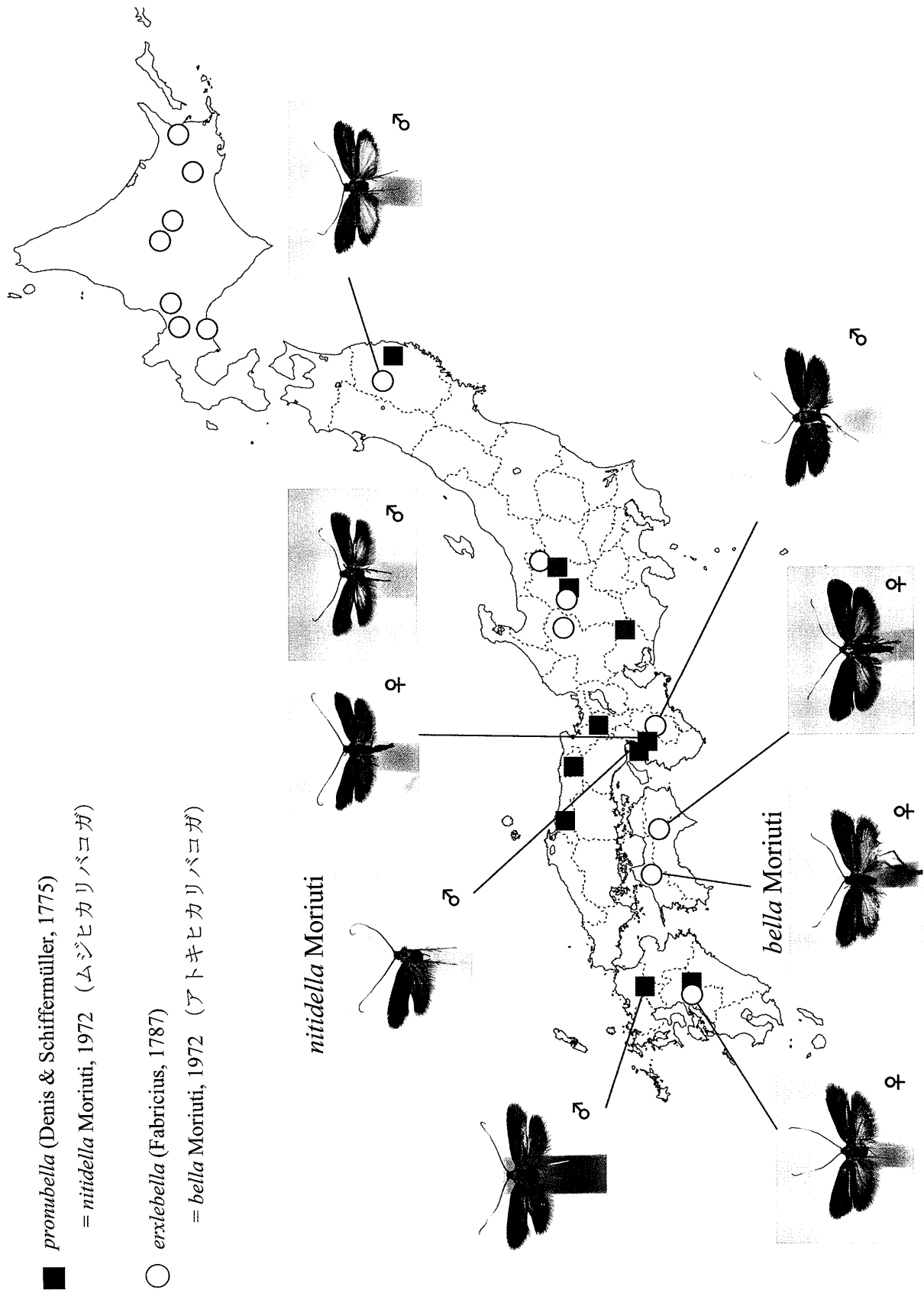


Fig.2. Collecting localities of *Roeslerstammia* spp.

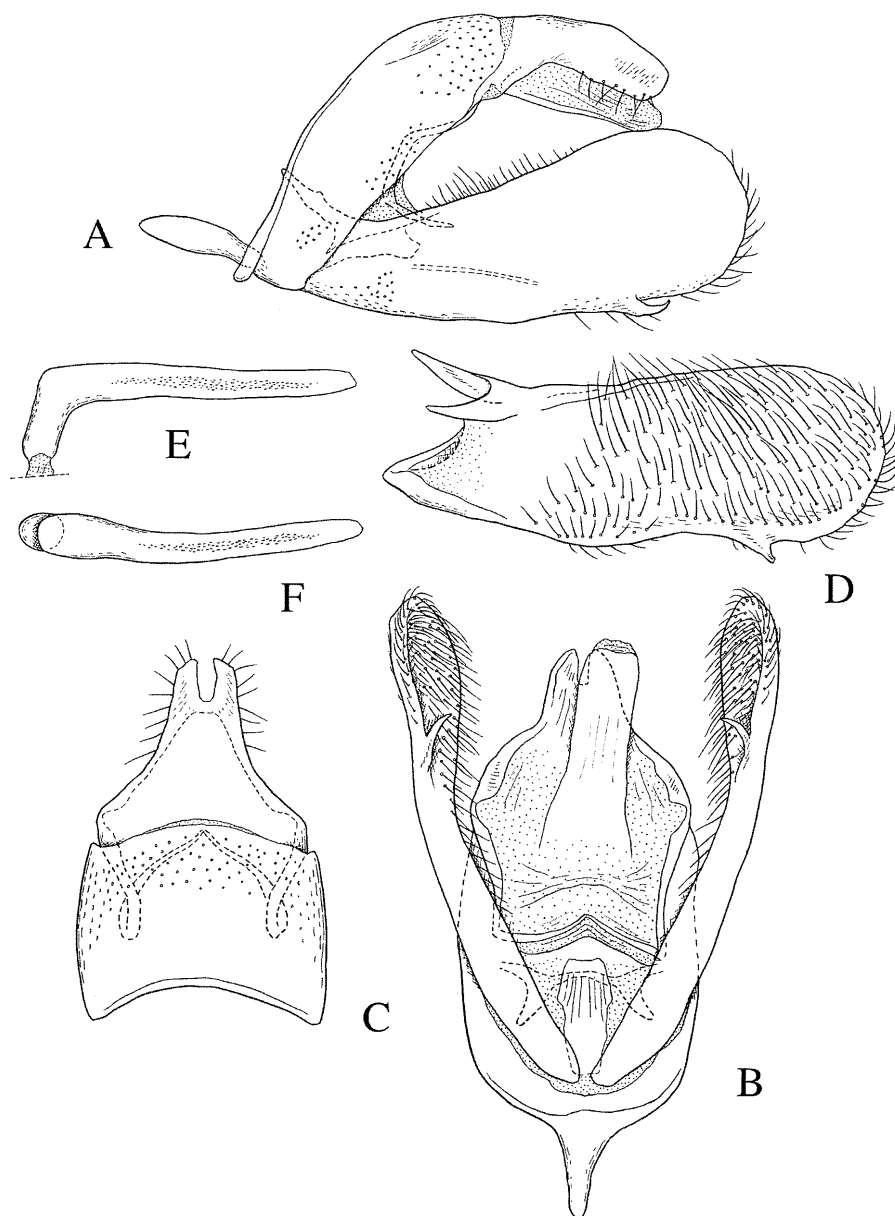


Fig. 3. Male genitalia of *Roeslerstermnia pronubella*. A: Lateral view, with aedeagus removed. B: *Ditto*, ventral view. C: Uncus and tegumen, dorsal view. D: Valva, inner view. E: Aedeagus, lateral view. F: *Ditto*, dorsal view.

for two specimens (Fig. 1G) reared by Dr Hiroshi Kuroko at Mt. Hikosan, Buzen (=Fukuoka Pref.) in April, 1964, the host plant is *Carpinus laxiflora* (Siebold & Zucc.) Blume (Betulaceae) (Fig. 1F). Dr Kuroko has provided us with the drawings of a mine of the first instar larva, head and prothorax of the mature larva and pupal shelter on the host plants (Fig. 6). He also has provided the following unpublished observation: on September 26, 1963, a first instar larva (*ca.* 2 mm in length), mining into a leaf of *Carpinus laxiflora*, was collected. The mine,

full-depth, wide linear, started from the apex of the leaf. After moulting within the mine, the second instar larva emerged from the mine and fed on the leaf-edge. The last instar was 7–10 mm in length. The head was mostly black, the abdomen pale green, semitransparent. Pupation took place on October 27, 1963, within a white ellipsoidal cocoon in a folded gallery near the tip of the leaf (Fig. 6C).

Dr Toshihisa Saito however reared a female from a cocoon

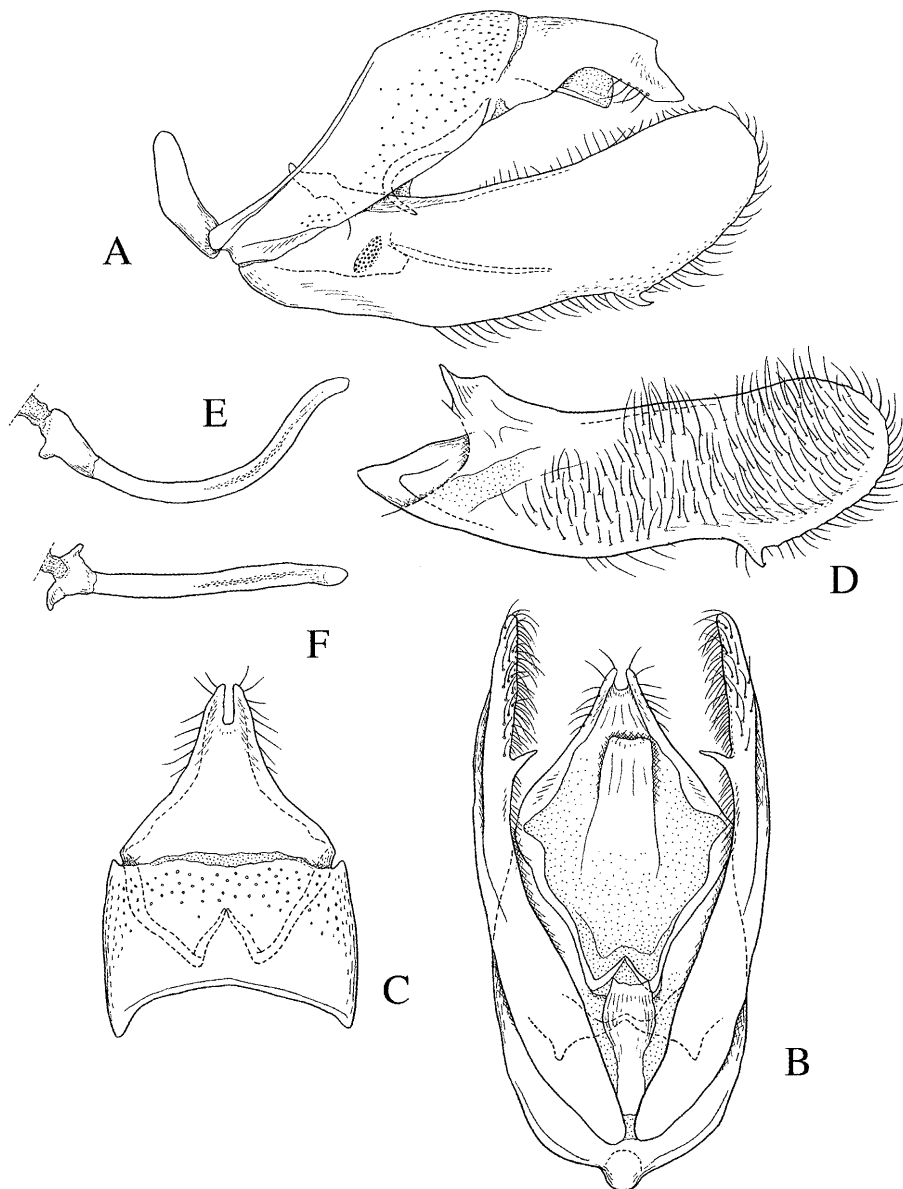


Fig. 4. Male genitalia of *Roeslerstammia erxlebelli*. A: Lateral view, with aedeagus removed. B: *Ditto*, ventral view. C: Uncus and tegumen, dorsal view. D: Valva, inner view. E: Aedeagus, lateral view. F: *Ditto*, dorsal view.

within the turned down leaf edge of *Fagus crenata* Blume, collected on June 4, 1998 in Mt. Izumi-katsuragi, Osaka (Fig. 1H). The data label shows that the adult emerged on June 14, 1998 (Fig. 1I).

In 2011, one of us (Kobayashi) collected a larva (first to second instar) mining into a small leaf of *Carpinus laxiflora*, forming a short linear mine along the leaf edge, in Konagao, Soni-mura, Nara Prefecture (Fig. 7A–B). The third to final instar larva was reared on *C. tschonoskii* Maxim. and

partly *C. laxiflora* in the laboratory (Fig. 7C–E, I). The third instar (Fig. 7C) is pale yellowish green in coloration and 3.5 mm in length, and the final instar (Fig. 5E) pale yellow and 8.5 mm. The cocoon within the turned down leaf edge of *C. laxiflora* is white (ca. 10.5 mm in length, 1.9–4.6 mm in width) (Fig. 7F–H). Although the adult did not successfully emerge, it was identified as *R. pronubella* by dissecting the pharate adult.

As described above, *Fagus crenata* (Fagaceae) and *Carpinus*

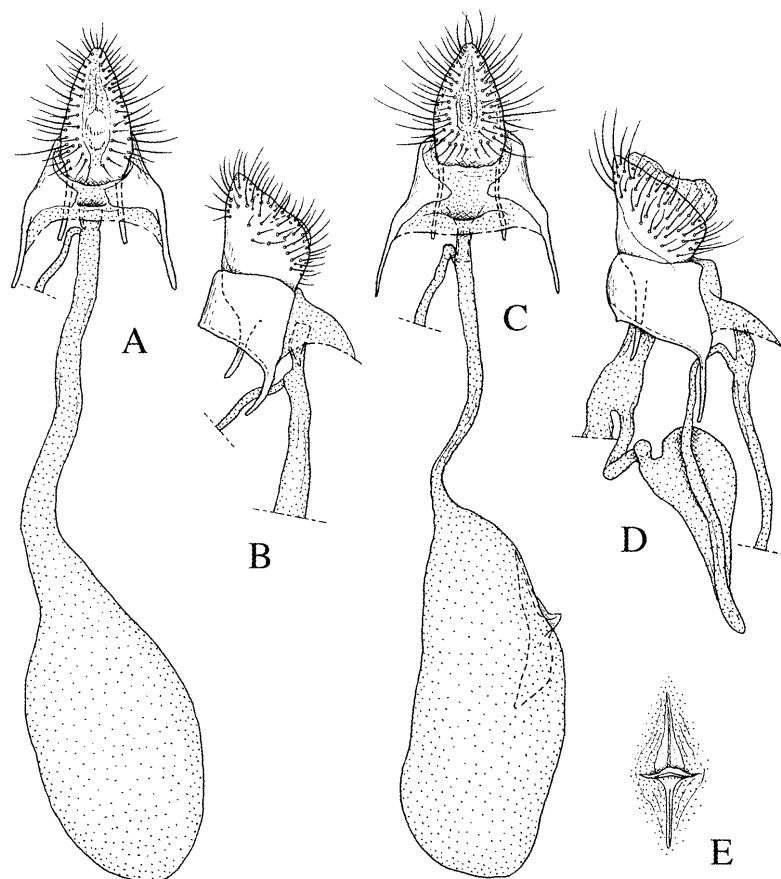


Fig. 5. Female genitalia of *Roeslerstermmia* spp. A, B: *R. pronubella*. C-E: *R. erxlebella*.
A, C: Terminalia and Bursa copulatrix, ventral view. B, D: Terminalia, lateral view. E: Signum.

laxiflora (Betulaceae) are recorded as host plants of *R. pronubella* in Japan. Beautiful photographs of the immature stages of *R. pronubella* in Europe are shown by Melzer (2011) on the website “Bestimmungshilfe für die in Europa nachgewiesenen Schmetterlingsarten”, in which the host plant is indicated as *Carpinus betulus*.

Materials examined. Japan [Honshu] 1 ♀, Shiga-kogen [Nagano Pref.], 15. vii. 1959, A. Mutuura; 1 ♂, Mt. Chausuyama (800 m), Kitashidara-gun, Aichi Pref., 28. v. 1974, Y. Arita; 1 ♂ (Paratype of *R. nitidella* Moriuti), Asiusensyuurin, Tanba (=Kyoto Pref.), 10. v. 1968, T. Yasuda; 1 ♂ (Holotype of *R. nitidella* Moriuti), Iwawakisan, Izumi (Osaka Pref.), 1. v. 1961, T. Saito; Mt. Izumi-katsuragi, Osaka Pref.: 2 ♂, 22. iv. 1981, T. Yasuda; 1 ♂, 21. iv. 1990, T. Saito; 1 ♂, 5. vi. 1992, T. Hirowatari; 1 ♂, 16. V. 1993, T. Ueda; 1 ♀, 4. vi. 1998, 14. vi. 1998 em. Host: “Buna” (= *Fagus crenata*), T. Saito; 1 ♀, 18. viii. 2001, T. Hirowatari, B.W. Lee, N.H. Ahn, Y. Miyamoto; 1 ♀, Usitaki-san, Osaka, 15. v. 1993, T. Ueda; 1 ♀, Mt. Daisen, Tottori Pref., 19. v. 1981, S. Hashimoto. [Kyushu] Mt. Hiko-san, Fukuoka Pref.: 2 ♂, 8. iv. 1954, H. Kuroko,

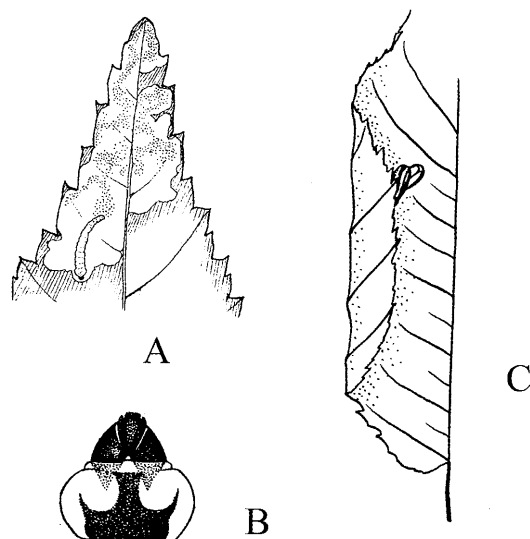


Fig. 6. Immature stages of *R. pronubella*. A: First instar larva mining into a leaf of *Carpinus laxiflora*. B: Head and prothorax of mature larva. C: Pupal shelter on *C. laxiflora*. (Drawings by courtesy of Dr H. Kuroko)

Host: "Akashide" (= *Carpinus laxiflora*); 1 ♀, 16, v. 1956, H. Kuroko; 1 ♀, 12, v. 1957, H. Kuroko; 1 ♀, Izumi-mura, Kumamoto Pref., 10, vi. 1994, T. Hirowatari.

Distribution. Japan: Honshu, Kyushu (new record); Europe, Russia.

Host plant. *Fagus crenata* Blume, Fagaceae and *Carpinus laxiflora* (Siebold & Zucc.) Blume, Betulaceae in Japan (new record); *Tilia* spp., Malvaceae in Europe (Huemer and Segerer, 2001).

Remarks. This species is distributed mainly in the south-west part of Honshu and Kyushu, Japan (Fig. 2). Oku (2003) recorded it from several localities in Iwate Prefecture. These records represent the northernmost distribution in Japan. The moths fly from April to August (Table 1).

Roeslerstammia erxlebelli (Fabricius) (Figs 1J–O, 2, 4, 5C–E)

Alucita erxlebelli Fabricius, 1787: 256.

Roeslerstammia bella Moriuti, 1972: 252; Moriuti, 1982: 206.

Roeslerstammia erxlebelli: Budashkin, 1995: 32; Budashkin, 1997: 432; Huemer and Segerer, 2001: 207.

Roeslerstammia erxlebelli bella: Heppner, 2005: 27.

Diagnoses of genitalia (Figs 4, 5C–E). Male (Fig. 4): Uncus bilobed, apically narrowed. Aedeagus long, slender and curved. Female (Fig. 5C–E): Ductus bursae slender, corpus bursae large, oval, with a strongly sclerotized cross-shaped signum.

Biology. The biology of the species is not known in Japan. In north Finland, the main host plants of *Roeslerstammia erxlebeniella* (= *R. erxlebelli*) are reported as *Tilia* spp., *Betula* spp., *Corylus* spp., and *Acer* spp., (Viramo, 1968).



Fig. 7. Habitat and immature stages of *R. pronubella*. A: Habitat: Konagao, Soni, Nara Pref., 700 m. B: First or second instar larva mining into a leaf of *Carpinus laxiflora*. C: Third instar larva. D: Later larva after larval molt. E: Last instar larva. F, G: Pupal shelter. H: Pupal shelter on *Carpinus laxiflora*. I: Fed leaf of *Carpinus tschonoskii* by mature larva.

Table 1. Number of individuals of *Roeslerstammia pronubella* and *R. erxlebella* specimens from Japan deposited in OPU, showing differences of the collecting season (month), hindwing pattern (yellow/brown) and sex (♂/♀).

species	hindwing	April	May	June	July	August	Total
<i>pronubella</i>	yellow	3♂	2♂1♀				5♂1♀
	brown	2♂	3♂3♀	2♀	2♀	1♀	5♂8♀
<i>erxlebella</i>	yellow		1♂1♀	3♂2♀	3♂1♀		7♂4♀
	brown			1♂1♀	2♂4♀	1♂2♀	4♂7♀

The egg is deposited at the tip of the leaf. First and second larval instars mine in a gallery near the tip of the leaf and later instars live in a slight web on the underside. Pupation takes place in a white silken cocoon within the turned down edge of the leaf. The pupa protrudes from the cocoon before adult ecdysis. The moths fly in the sunshine but also come to light (Kyrki, 1983; Agassiz, 1996).

Materials examined. Japan [Hokkaido] 2♂, Kunbetsu, Shibetsu-cho, 22. vii. 2000, T. Hirowatari, N.H. Ahn, Y. Miyamoto, H. Okamoto, K. Yamada; 2♂, Asahidake-onsen 1000m, 21. vii. 2007, T. Mano; 1♀, Mitsumata, Kamishihoro-cho, 14. vii. 2000, T. Hirowatari; 1♂, Futatsuyama, Shibeche, Kushiro., 3. vi. 1957, K. Ijima; 2♂, Nopporo., 27. vii. 1993, T. Hirowatari; 1♂, Teine, 13. vi. 1959, T. Kumata; 1♂, (Noboribetsu-onsen), 16. vi. 1994, K. Ijima.

[Honshu] 1♂, Kuzakai, Iwate Pref., 30. v. 1980, K. Yasuda; 1♂, Kayanodaira, Nagano Pref., 11. vi. 1998, H. Okamoto; 1♀, 11. vii. 1999, Y. Sawada; same locality; 1♀, Shirahone, Azumi-mura, Nagano Pref., 9. vii. 1995, T. Hirowatari; 1♀, Hikagedaira, Gifu Pref., 3. vi. 1973, S. Hashimoto; 1♂, Wasamata-yama, Nara Pref., 22. viii. 1994, T. Kadohara; 1♀, same data, S. Moriuti. [Shikoku] 1♀, Mt. Tsurugi, Naga-cho, Tokushima Pref., 11. v. 2009, T. Hirowatari; 1♀, (Holotype of *R. bella* Moriuti), Ishizuchisan, Iyo (=Ehime Pref.), 12. vi. 1961, T. Saito. [Kyushu] 3♀, Shiratori, Kumamoto Pref., 9–10. vi. 1990, T. Hirowatari.

Distribution. Japan: Hokkaido (new record), Honshu, Shikoku, Kyushu (new record); Europe, Russia.

Host plant. Unknown in Japan. Larvae mine *Tilia* spp., Malvaceae (Tiliaceae), *Betula* spp. and *Corylus* spp., Betulaceae and *Acer* spp., Sapindaceae in Europe (Viramo, 1968).

Remarks. This species is distributed throughout Japan, from Hokkaido to Kyushu (Fig. 2). The moths fly from May to August, but they are frequently collected during June and July (Table 1).

Discussion

Agassiz (1996) noted that the moths of *R. erxlebella* appear in May to June (first generation), and August to September (second generation) in England. Agassiz (1996) pointed out that the distinctive moth of *R. pronubella* with yellow hindwings is but a first generation form of a strikingly dichroic species, the majority of whose specimens do not have yellow hindwings.

In the present study, we examined 19 specimens (10♂, 9♀) of *R. pronubella* (Table 1). Among them, 6 (5♂1♀) possessed yellow hindwings and 13 (5♂1♀) possessed brown ones. Many individuals (10♂, 4♀) were collected during April to mid May, and have variable hindwings: yellow (5♂1♀) and brown (5♂3♀). Individuals (5♀) collected from June to August possessed brown hindwings.

On the other hand, we examined 22 specimens (11♂, 11♀) of *R. erxlebella* (Table 1). Among them, 11 (7♂4♀) possessed yellow hindwings and 13 (4♂7♀) possessed brown ones. The moths were mostly collected during June and July and they have variable hindwings: yellow (6♂3♀) and brown (3♂5♀), and 3 specimens (1♂, 2♀) collected in August have brown hindwings. Of 7 specimens (6♂, 1♀) from Hokkaido and Iwate Prefecture, in northern Japan, 4♂ and 1♀ collected in mid May to mid June, have yellow hindwings, while two specimens (2♂) collected at the end of July have brown hindwings.

Thus, although it is still unclear whether the hindwing pattern is entirely attributable to seasonal form, moths emerging at the end of the flying periods, which probably represent the second generation, tend to have brown hindwings in both sexes in both species.

Moriuti (1972) described *R. bella* based on a single female, and compared the difference of the female genitalia erroneously with *R. pronubella*, but not with *R. erxlebella*. This was probably because the external features of *R. bella* at a glance are similar to that of normal European *R. pronubella* in having yellow hindwings. At the same time, Moriuti (1972) described *R. nitidella* based on two males, erroneously comparing the male genitalia with those of *R. erxlebella*. In this he was also misled by variation of

hindwing markings. As Agassiz (1996) noted, *R. erxlebella* and *R. pronubella* are not superficially distinguishable from each other, and are separable only by the genital characters.

Although Heppner (2005) treated Japanese representatives of these species as distinct subspecies, *R. pronubella nitidella* Moriuti and *R. erxlebella bella* Moriuti, we do not adopt this treatment because we could not find any unique feature in Japanese specimens either in the wing markings or in the genitalia.

Acknowledgments

We especially thank Dr H. Kuroko (Kishiwada, Osaka) for providing us with immature stage biology of *R. pronubella*, and Dr J. B. Heppner (Florida) and Dr M. G. Ponomarenko (Vladivostok) for important information of literature. Prof. M. Ishii and Dr N. Hirai of Osaka Prefecture University gave us valuable suggestions. The specimens used in this study were donated by the following entomologists, to whom we are much indebted: Dr T. Saito (Ikeda, Osaka), Dr Y. Sawada, and Mr H. Okamoto (OPU).

References

- Agassiz, D. J. L., 1996. *Roeslerstammidae*. In Emmet, A. F. (ed.) *The Moths And Butterflies of Great Britain and Ireland*, pp. 110–114.
- Budashkin, Y. I., 1995. Note on the synonymy of Palaearctic roeslerstammid moths (Lepidoptera, Roeslerstammidae). *J. Ukr. Ent. Soc.* **2** (1): 31–34.
- Budashkin, Y. I., 1997. *Roeslerstammidae*. In Ler P. A. (ed.) *Key to the insects of the Russian Far East*, Vol. 5: Trichoptera and Lepidoptera 1, pp. 431–432. Vladivostok, Dal'nauka. (In Russian)
- Heppner, J. B. 2005. Review of the family Amphitheridae (Lepidoptera: Tineoidea). *Tinea* **18**/Suppl. 3: 24–40.
- Huemer, P. and A. H. Segerer, 2001. Polyphänismus bei "Kleinschmetterlingen" am Beispiel von *Roeslerstammia erxlebella* (Fabricius, 1787) und *R. pronubella* ([Denis & Schiffermüller], 1775). *Entomol. Zeits.* **11** (7): 207–211.
- Kirki, J., 1983. *Roeslerstammia* Zeller assigned to Amphitheridae, with notes on the nomenclature of the family (Lepidoptera). *Ent. Scand.* **14**: 321–329.
- Melzer, H., 2011. Bestimmungshilfe für die in Europa nachgewiesenen Schmetterlingsarten. *Roeslerstammidae*. Available from: http://www.lepiforum.de/cgi-bin/lepiwiki.pl?Roeslerstammia_Erxlebella
- Missouri Botanical Garden, 2011. Tropicos.org. Missouri Botanical Garden. Available from: <http://www.tropicos.org/> [accessed 7 October 2011].
- Moriuti, S., 1972. Seven new species of Acrolepiidae from Japan and Formosa (Lepidoptera). *Kontyu* **40**: 245–253.
- Moriuti, S., 1982. *Roeslerstammidae*. In Inoue, H., H. Sugi, H. Kuroko, S. Moriuti, A. Kawabe and M. Owada (eds), *Moth of Japan 1*, pp. 206. Kodansha, Tokyo. (In Japanese)
- Oku, T., 2003. Microlepidoptera of the Iwate Prefecture. *Trans. Iwate ent. Soc. Suppl.* (2): 1–157. The Iwate Entomological Society "IES", Morioka, Japan. (In Japanese)
- Viramo, J., 1968. Über die Verbreitung und die Wirtspflanzen von *Roeslerstammia erxlebeniella* F. (Lep., Acrolepiidae). *Aquilo, Ser. Zool.* **6**: 12–17.

摘要

日本産ヒカリバコガ属（鱗翅目、ヒカリバコガ科）に関する生物学的知見（広渡俊哉・土谷俊弘・小林茂樹）

ヒカリバコガ属 *Roeslerstammia* は、ヨーロッパから日本にかけて分布する2種とインド北部に分布する2種の計4種が知られている。この属の成虫の前翅は金属光沢をもつ銅色または暗褐色で、後翅に黄色の斑紋をもつものもある。ヨーロッパでは、アトキヒカリバコガ *R. erxlebella* (Fabricius) (= *R. bella* Moriuti) が、シナノキ属、カバノキ属などを、ムジヒカリバコガ *R. pronubella* ([Denis & Schiffermüller]) (= *R. nitidella* Moriuti) がシナノキ属を寄主植物とすることが知られていた。日本にはアトキヒカリバコガとムジヒカリバコガの2種が分布するが、分布や寄主植物の情報は不十分な点が多かった。そこで本研究では、日本産ヒカリバコガ属の分布や寄主植物を整理する目的で、日本各地で得られた大阪府立大学昆虫学研究室の所蔵標本を用いて、交尾器の形態にもとづいて種の同定を行い、分布の実態を調査した。

その結果、ムジヒカリバコガとアトキヒカリバコガとは、後翅に黄色の斑紋があるかどうかで識別されていたが、同じ場所で同時に採集された同種個体の中にも後翅の斑紋に変異があり、ヨーロッパでも指摘されていたように、後翅の斑紋によって2種が識別できないことを再確認した。さらに、これまで不十分であった本属の日本における分布情報を追加した。また、ムジヒカリバコガについては、標本の飼育記録と奈良県曽爾村での観察から、ブナとアカシデを寄主としていることがわかった。

本稿では、ヒカリバコガ属2種の寄主植物、分布などをまとめた。

ムジヒカリバコガ *R. pronubella* ([Denis & Schiffermüller], 1775) (Figs 1A–I, 2, 3A, C, 4, 5)

雄交尾器のuncusは二又し先端が幅広く、aedeagusは短くほぼまっすぐで先端に向かって細くなる。雌交尾器のductus bursaeはほぼ一様の太さの袋状で、corpus bursaeとの境界が不明瞭であり、signumは小さいか消失する。

寄主植物：シナノキ属 *Tilia* (ヨーロッパ：Huemer and Segerer, 2001), 新たに日本でブナ *Fagus crenata* とアカシデ *Carpinus laxiflora* を追加した。

1–2 齢幼虫は寄主植物の葉の先端部、または葉縁に沿って全層潜孔をつくり、2 齢で潜孔から脱出し、3 齢以降は葉縁

から葉を摂食する。幼虫は、老熟すると葉の縁を曲げてその中で楕円形のマユを作り蛹化する。

分布：本州, 九州* (*新記録)；ヨーロッパ, ロシア。

出現時期：成虫は4月から8月まで得られているが、4月と5月に多くの個体を得られており、6月以降の個体はいずれも後翅に黄色斑のないタイプだった。

アトキヒカリバコガ *R. erxlebelli* (Fabricius, 1787) (Figs 1J–O, 2, 3B, D)

雄交尾器のuncusは二又し先端は狭くなり、aedeagusは細く半円状のカーブを描く。雌交尾器のductus bursaeは細く、corpus bursaeは大きくふくらみ、細長く十字状の大きなsignumをもつ。

寄主植物：日本では未確認。シナノキ属 *Tilia*, カバノキ属

Betula, ハシバミ属 *Corylus*, カエデ属 *Acer* など（ヨーロッパ）

分布：北海道*, 本州, 四国, 九州* (*新記録)；ヨーロッパ, ロシア。

出現時期：成虫は5月から8月まで得られており、6月と7月に多くの個体を得られており、8月の個体はいずれも後翅に黄色斑のないタイプだった。

以上のことから、いずれの種も少なくとも年2回発生していると思われるが、発生の後期（7–8月）に出現する2化目と思われる個体は後翅に黄色斑をもたないものが多く、これらはヨーロッパ産で Agassiz (1996) などに指摘されているように、季節型の可能性がある。

(Received October 7, 2011 Accepted January 25, 2012)